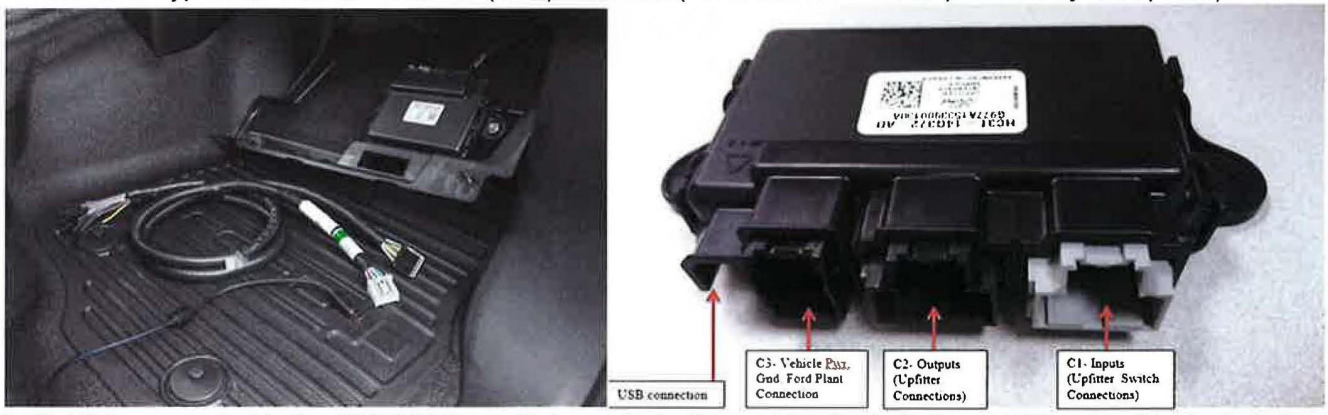
EXHIBIT B

Part 6 of 6

- Windows based UIM Project Editor software (see Downloading Software) (http://www.fleet.ford.com/login/)

- The UIM 16-way harnesses 9 (two blunt cut 3' harnesses with connectors). Replacement harnesses are available through the dealership.

- A standard Type B Universal Serial Bus (USB) 2.0 cable (not included- must be provided by the upfitter)



Left: UIM as mounted in the 2017MY Super Duty, and interface cables (included) and USB cable (Not included)
Right: UIM connectors

Downloading Software from the Ford Fleet website:
The Windows based UIM project editor software is available through the Ford Fleet website (http://www.fleet.ford.com/login/). Existing Ford Fleet website users may use their current login. New users should follow the instructions listed on "creating an account" via the link provided. If you have questions or need further assistance with the Ford Fleet Website, contact the Ford Fleet Customer Information Center at:

1-800-34-FLEET (1-800-343-5338).
Monday-Friday 8:30 AM-5 PM EST
Or
Contact Ford Fleet via email (**http://www.fleet.ford.com/contact-us/customer-information-center/email-us/**)

Note: Ford Motor Company is not responsible for debugging or verifying the function of the customer created UIM program files. It is the responsibility of the upfitter to ensure proper function of the software created to complete their upfit.

UIM signals:
The UIM receives 28 high speed CAN "read only" signals from various vehicle systems, providing upfitter access for aftermarket equipment needs. In addition, the upfitter may provide up to 9 additional inputs. These messages and inputs may be selected by the upfitter in the Project Editor to program the UIM outputs for aftermarket equipment. Note that the UIM has no interaction with vehicle feature functions (with the exception of horn chirp). It is strictly designed to provide outputs for aftermarket equipment.

The UIM provides the following:
- 9 configurable inputs (active low or active high), (blunt cut pigtail connector*)
- 7 Low side driver output pins (blunt cut pigtail connector*)
- 8 High side driver output pins (blunt cut pigtail connector*)
- 25-30 HSCAN signals (descriptive names in the Project Editor)
- *Pigtails with 3 foot jumpers are provided for I/O's to connect to aftermarket devices.

Note: The UIM provides output signals only, and not intended to directly power any aftermarket device. Customer must use external relays to drive any equipment.

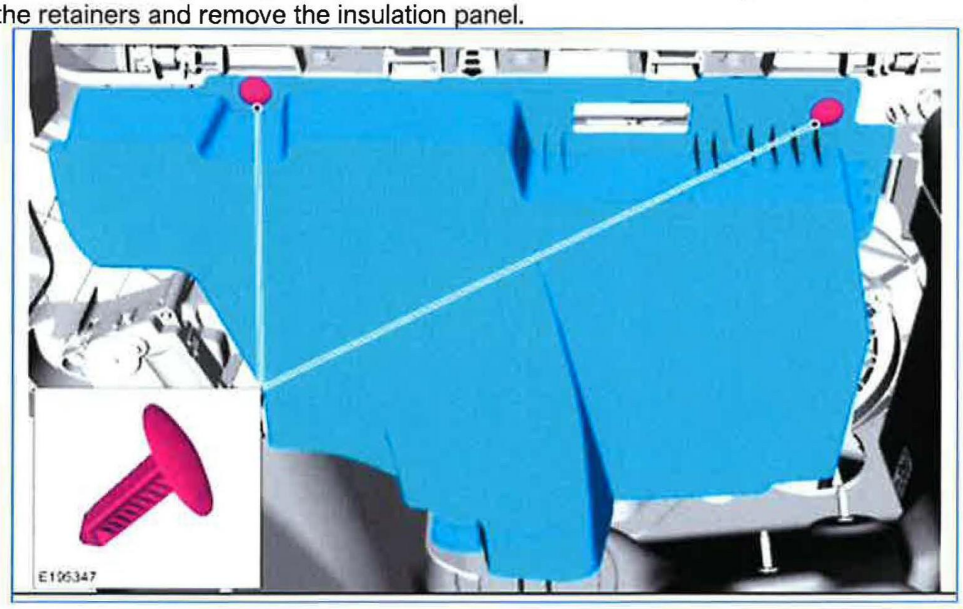
The following are some of the High-Speed CAN messages available to the UIM. See the Vehicle Projects Editor's manual for more information.

Message		Message
Engine Coolant Temp		Rear Left Door Status
Engine Status		Rear Right Door Status
Outside Air Temp		Driver Door Status
A/C Compressor Clutch Status		Hood Status
Cruise Control Mode Status		Tire Pressure Monitoring System Status
Vehicle Speed		Air Conditioning (A/C) Request
Engine Speed (RPM)		Driver Seat Buckle Status
Transmission Oil Temp		Passenger Seat Buckle Status
Automatic Transmission Gear Status		Restraints Indicator Lamp (RIL) Status
Door Lock Status		Crash Event Severity
Ignition Status		Oil Pressure Lamp Status
Crash Event Status		Malfunction Indicator Lamp (MIL) Status
Passenger Door Status		Vehicle Battery Voltage
Odometer Reading		Fuel Level

2017 MY Super Duty UIM location:

The UIM will be available as an orderable option (order code 18A) on the 2017 MY Super Duty. The module is located in the interior of the vehicle on the passenger side behind and below the Lower the glove compartment. To access the UIM:

1. Release the retainers and remove the insulation panel.



Refer to the Body Builder Layout Book for additional guidelines and recommendations. If you have any questions, please contact the Ford Body Builders Advisory Service as shown in the header of this bulletin.

Originator: BBAS

Ford Motor Company Upfitter Interface Module (UIM) Examples

Upfitter Interface Module (UIM) is designed to manage final stage installed equipment thus allowing the upfitter the ability to develop a "smart" logic control. UIM module is located below the glovebox (Super Duty; if equipped) and includes 3 foot long jumper harness with connectors for interfacing upfitter installed input or output controls. Upfitters are responsible for developing their interface program logic using the software provided by Ford. The upfitter will then flash (upload) this configuration to the UIM module via the UIM USB port.

The UIM module and connection harness consists of:

- Configurable inputs (active low or active high)
- Low side driver output pins / High side driver output pins
- Various CAN signals (descriptive names in configuration software)
- Software to configure the UIM
- 3 foot long blunt cut wires with UIM connectors

This document contains UIM configuration examples. Although the examples are not all inclusive as related to the complete capability of the Ford Upfitter Interface Module (UIM), the examples should serve the upfitter community with process and workflow examples related to "smart" logic development.

IMPORTANT! AFTER CREATING A UIM CONFIGURATION USING THE FORD PROVIDED UIM EDITOR, AND HAVE SUCCESSFULLY FLASHED (PROGRAMMED) THE UIM AND VALIDATED VEHICLE OPERATION, BE SURE TO NAME AND SAVE THE UIM CONFIGURATION FILE USING THE VEHICLE VIN NUMBER.

Examples

As with any smart UIM solution, the final stage manufacturers (upfitter) must design, develop and deploy a suitable solution for their customer. As an upfitter, you will need to create a plan expressed as a "problem to solve" which can be a written document or graphical representation. The following examples are illustrated in this document.

- Example #1 (low complexity): Enable front facing dash camera when emergency lamps are activated. The design is in relation to a single input controlling a single output.
- Example #2 (medium complexity): Salt spreader automatically stops when the driver leaves exist vehicle. The design is spreader disengagement if the vehicle enters either Park or Neutral AND the driver door is open AND the seat belt is unbuckled.
- Example #3 (medium complexity): Salt spreader changes spread volume based on vehicle speed. The design is volume changes in relation to vehicle speed.
- Example #4 (high complexity): Prevent operation of mechanical device (such as a front mounted auger) when certain engine / vehicle conditions are NOT in range. The design is equipment disable when all conditions are NOT met.

Note: You may find it helpful to have the Ford UIM application software open while reviewing these examples.

Example #1 – Auto-Enable Dash Cam:

EXHIBIT 312

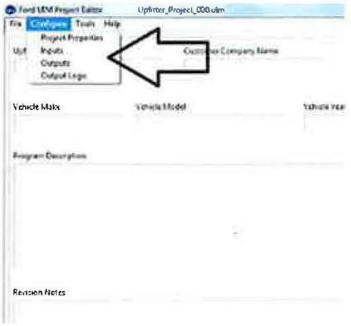
This configuration relies on detecting vehicle START or RUN, emergency lamps ON, and will then enable the dash cam output signal.

Logic flow:

- Ignition Status:
  - ON / RUN Logic True - Check Emergency Lamp Status
  - OFF Logic False / No action / Camera Relay Remains OFF
- Emergency Lamp Status:
  - ON Logic True - Enable Dash Camera Control Relay
  - OFF Logic False / No action / Camera Relay Remains OFF

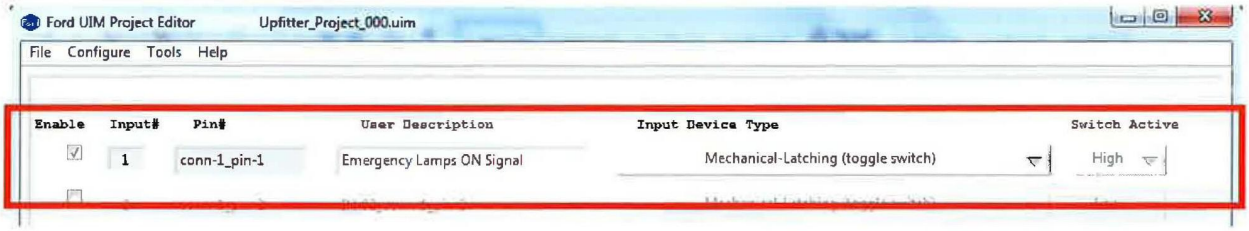
Within the UIM application software is a pull down menu. This configuration will require:

- Input from Emergency Lamp status (12 volt "high" signal located under "Inputs")
- Output (under Outputs) grounds a camera control relay circuit when the logic is TRUE (camera relay provides power to the camera circuit switching the camera to ON)
- Vehicle Ignition status (CAN data under "Output Logic")

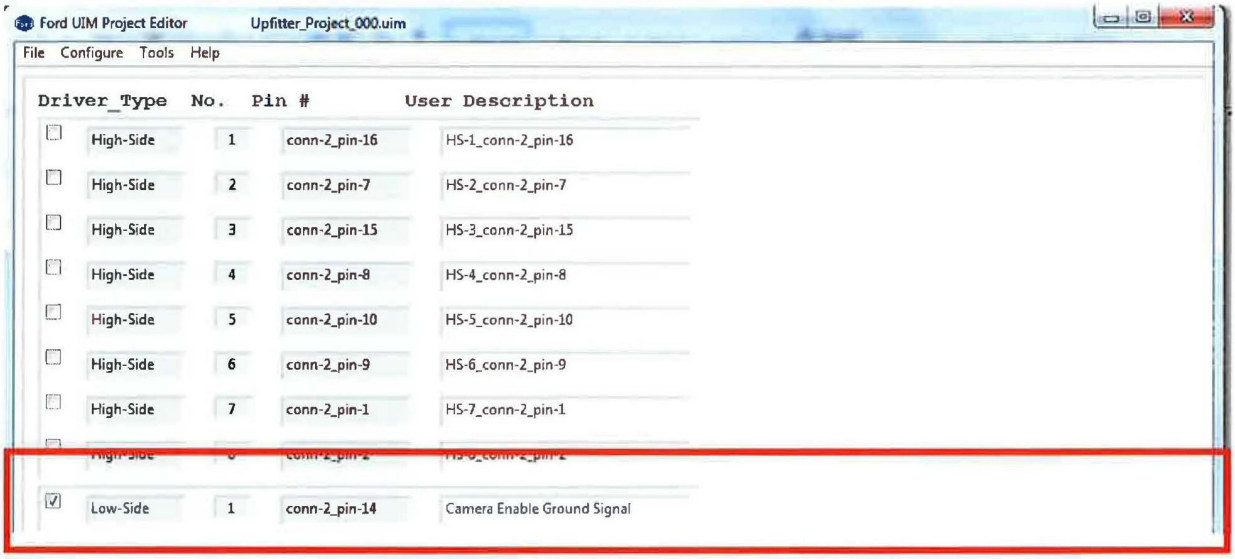


Configuration Example:

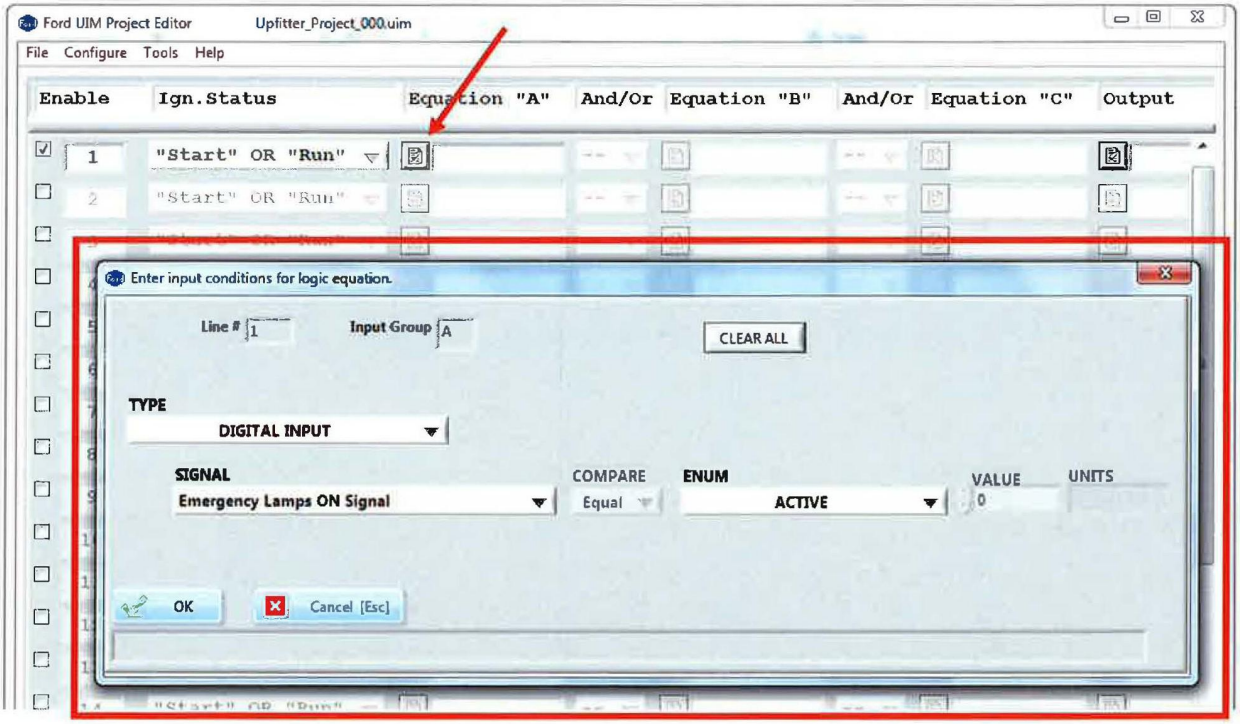
To configure the Emergency Lamps ON signal start with the Inputs section. Begin by checking the Enable box. Add the proper name in the box. Select the appropriate Input Type and Switch Active configuration. This is Input #1 that will connect via a blunt cut from the upfitter installed "enable" Emergency Lamps ON control switch.



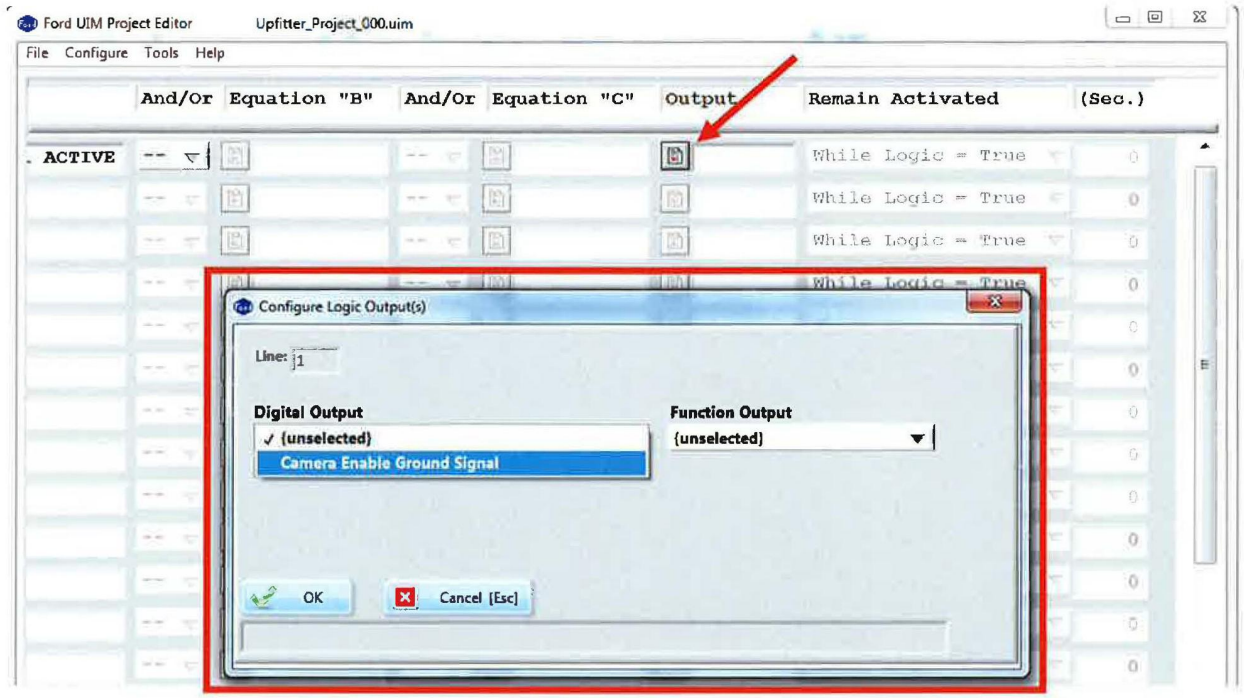
Next add the desired output control located under the Output menu. Begin by checking the Enable box. Since the output is a ground signal, use the Low Side section. Name the item as needed.

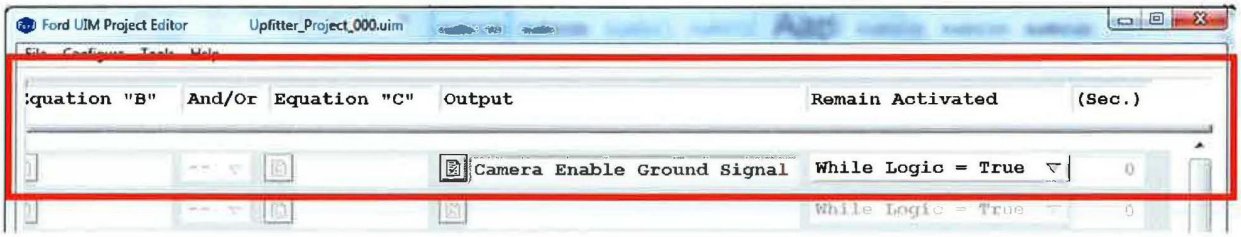


Finally, configure the required logic via the pull down menu "Output Logic". Begin by checking the box. Since ignition input status is always available, this will remain at the default value. Next select the Equation "A" editing box. This opens a configuration window. Make required choices and select OK.



Enter the Output Logic result if conditions are TRUE. Select OK.





Now complete the customer information and save the UIM file using a VIN identifier. Then flash (program) the UIM with a laptop and USB cable (instructions are detailed in the UIM user guide). Be sure to export the configuration as an excel file which will be helpful with wiring the appropriate blunt cuts wires. After flashing and wiring the UIM, test for proper upfit operation.

IMPORTANT! AFTER CREATING A UIM CONFIGURATION USING THE FORD PROVIDED UIM EDITOR, AND HAVE SUCCESSFULLY FLASHED (PROGRAMMED) THE UIM AND VALIDATED VEHICLE OPERATION, BE SURE TO NAME AND SAVE THE UIM CONFIGURATION FILE USING THE VEHICLE VIN NUMBER.

Example #2 – Disengage Salt Spreader Control

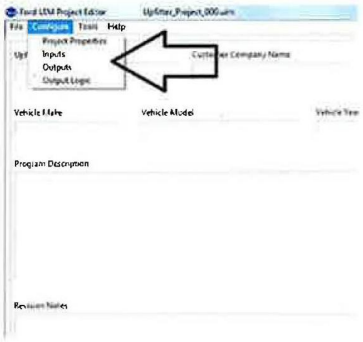
This example illustrates how a salt spreader can be stopped when the driver leaves the vehicle. The design is spreader disengagement if the vehicle enters either Park or Neutral AND the driver door is open AND the seat belt is unbuckled.

Logic flow:

- Ignition Signal / Salt Spreader Engage Signal:
  - ON / YES — Logic True – Go To Door Status / Seat Belt
  - ON / NO — Logic False -- No action / Spreader Remains OFF
  - OFF/ NO — Vehicle is not running -- Spreader Remains OFF
- Door Status / Seat Belt Status:
  - Closed / Buckled — Logic True – Salt Spreader ON
  - Open / Buckled — Logic False -- No action / Spreader Remains OFF
  - Closed / NOT Buckled — Logic False -- No action / Spreader Remains OFF

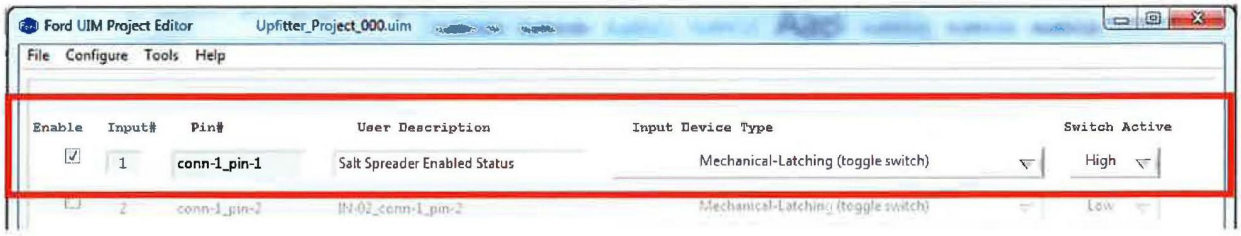
Using the UIM application software pull down menu choices, configure the:

- Salt Spreader Enabled Status (Inputs)
- Salt Spreader Control (Output)
- Vehicle Ignition (CAN data under Outputs)
- Seat Belt and Door Status (CAN data under Output Logic)

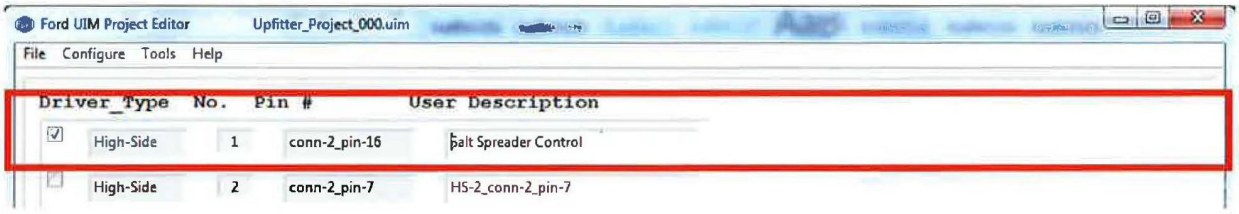


Configuration Example:

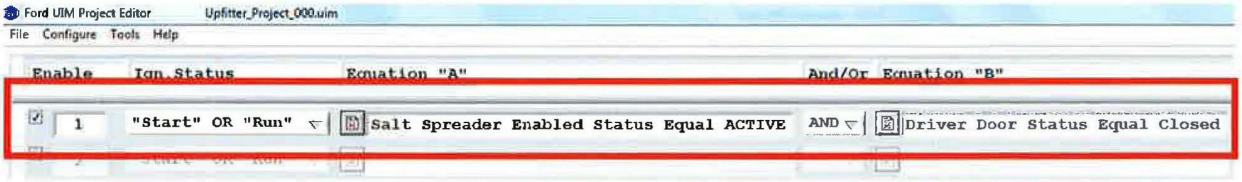
Begin by configuring the Salt Spreader Enabled Status signal from the Inputs section. Check the Enable box. Add the proper Salt Spreader Enabled Status name. Select the appropriate Input Type and Switch Active configuration. This is Input #1 that will connect via a blunt cut from the "enable" control.



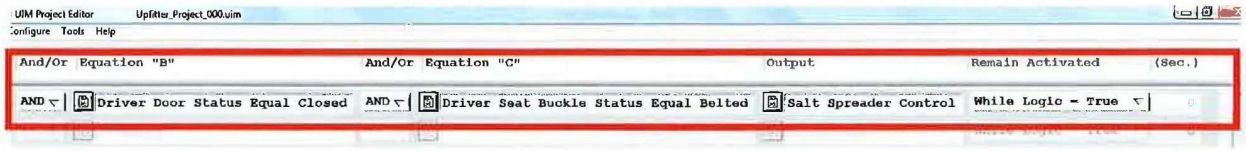
Next add the desired output control located under the Output menu. Begin by checking the box and name the Output accordingly. Note: This example shows a high-side control signal versus a ground side control.



Finally, configure the logic statement. Start with ignition equals Start or Run AND Salt Spreader Engaged.



Continue with Drivers Door Closed AND Seat Belt Buckled. If all statements are TRUE, the output will be active. If any ONE statement is FALSE, the spreader output will be OFF.



Now complete the customer information and save the UIM file using a VIN identifier. Then flash (program) the UIM with a laptop and USB cable (instructions are detailed in the UIM user guide). Be sure to export the configuration as an excel file which will be helpful with wiring the appropriate blunt cuts wires. After flashing and wiring the UIM, test for proper upfit operation.

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Example #3 -- Salt Spreader Speed Control

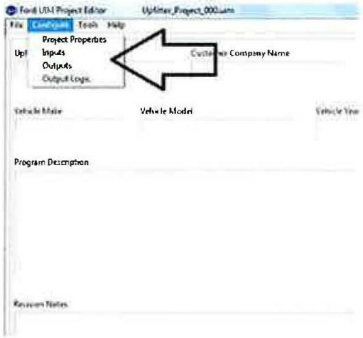
This example illustrates how to detect vehicle ignition, salt spreader enabled, and vehicle speed to control a variable output salt spreader.

Logic flow:

- Ignition Status:
  - ON / RUN — Logic True - Check Salt Spreader Enable Status
  - OFF — Logic False / No action / Salt Spreader OFF
- Salt Spreader Enable:
  - ON — Logic True – Check Vehicle Speed
  - OFF — Logic False / No action / Salt Spreader OFF
- Vehicle Speed (CAN Data):
  - Zero — Logic True – Salt Spreader OFF
  - >3mph (4.8kph) yet <10MPH (16kph) — Logic True -- Enable Low Speed Relay
  - >10mph (16kph) yet <20mph (32kph) — Logic True -- Enable Medium Speed Relay
  - >20mph (32kph) — Logic True -- Enable High Speed Relay

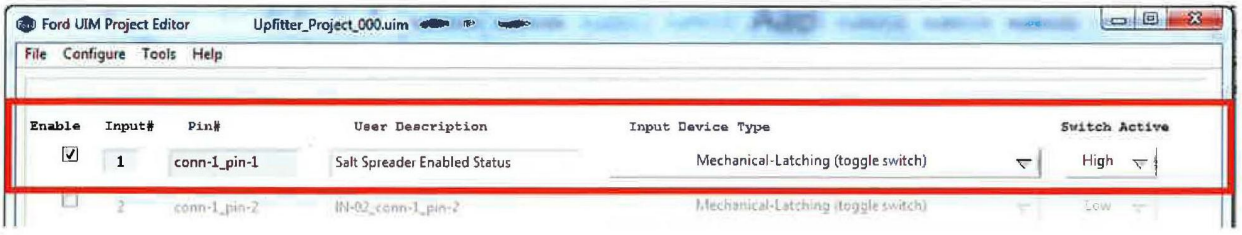
Within the UIM application software is a pull down menu choice. This configuration will require:

- Salt Spreader Enabled Status (Inputs)
- Vehicle Ignition status (CAN data under Outputs)
- Vehicle Speed (CAN data under Outputs)



Configuration Example:

Configure the Salt Spreader Enabled Status signal within the Input section. Begin by checking the Enable box. Add the proper Salt Spreader Enabled Status name in the box. Select the appropriate Input Type and Switch Active configuration. This is Input #1 that you will connect to a blunt cut "enable" signal from your control device.



Next add the desired output control information located under the Output menu. Begin by checking the four enable boxes. Name the Outputs accordingly (Stop, Low, Medium, High).

Start, spreader speed change and stop command could look like this:

Line #1: Stop if vehicle is at or near a stop

Line #2: Enable Low Speed Spread if >3mph (4.8kph) yet <10MPH (16kph)

Line #3: Enable Medium Speed Spread if >10mph (16kph) yet <20mph (32kph)

Line #4: Enable High Speed Spread when >20mph (32kph)

Now complete the customer information and save the UIM file using a VIN identifier. Then flash (program) the UIM with a laptop and USB cable (instructions are detailed in the UIM user guide). Be sure to export the configuration as an excel file which will be helpful with wiring the appropriate blunt cuts wires. After flashing and wiring the UIM, test for proper upfit operation.

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Example #4 – Prevent Auger Operation If Parameters Not In Range

This configuration illustrates how to use engine parameters and an operator safety switch to disable auger when the conditions are not in range.

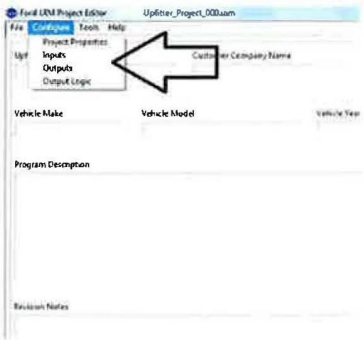
****Note: Since the logic lines cannot contain the entire logical flow, this example illustrates how to tie input-to-output wires together thus manually bridging the logic flows through hard-wiring.**

Logic flow:

- Ignition Status:
  - ON / RUN — Logic True – Go To Battery Voltage
  - OFF — Logic False / Auger OFF
- Battery Voltage:
  - > 95% — Logic True – Go To Engine Temperature
  - <= 94% — Logic False / Auger OFF
- Engine Temperature:
  - <215F (101.6C) — Logic True – Engine Oil Pressure Lamp Status
  - >=216F (102.2C) — Logic False / Auger OFF
- **Engine Oil Pressure Lamp Status:
  - ON — Logic True – Go To Operator Safety Switch
  - OFF — Logic False / Auger OFF
- Operator Safety Switch:
  - ON — Logic True – Auger ON
  - OFF — Logic False / Auger OFF

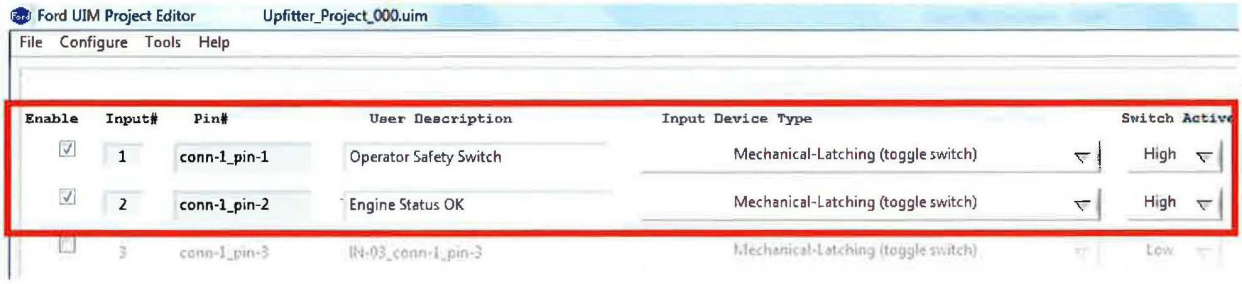
Within the UIM application software is a pull down menu choice. This configuration will require:

- Operator Safety Switch (Inputs)
- Vehicle Ignition status (CAN data under Outputs)
- Engine Oil Pressure Lamp Status (Outputs)
- Engine Temperature (CAN data under Outputs)
- Battery Voltage status (CAN data under Outputs)
- **Engine Status OK (Output Logic -- Note: Hardwire to Engine Status INPUT wire)
- **Engine Status OK (Inputs Logic -- Note: Hardwire to Engine Status OUTPUT wire)
- AUGER ON Command (Output Logic)

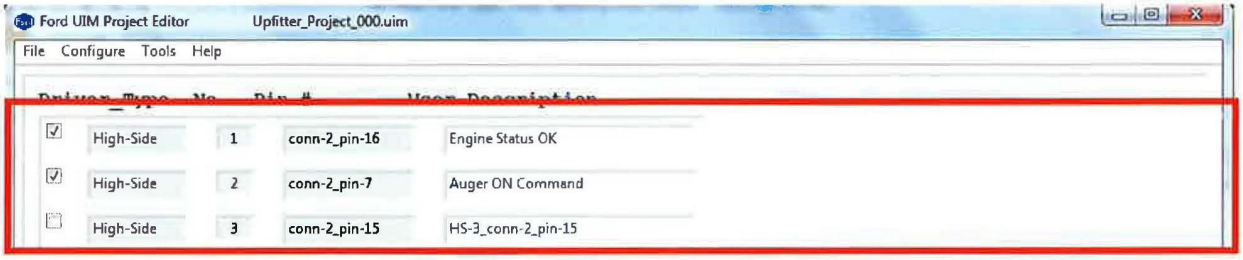


Configuration Example:

Configure the Auger Enable signal begin by configuring the Inputs section. Check the boxes, name the Inputs, and select the appropriate attribute (Input Device Type and Switch active).

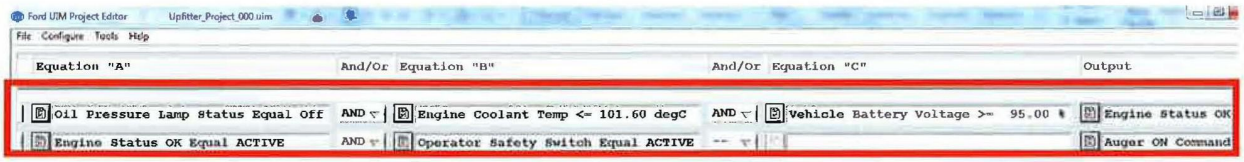


Next configure the Outputs signals. Check the boxes and name the Outputs.



Finish by configuring the Output Logic as shown. This example uses one output bridged to an input to connect the two software logic lines together. Review the example. The information to the left of Equation A has been omitted (engine Ignition Status). Line #1 of the Output logic controls Line #2.

Note: These two software lines of logic are connected (hard wired) by tying one UIM Input wire to one UIM Output wire.



Now complete the customer information and save the UIM file using a VIN identifier. Then flash (program) the UIM with a laptop and USB cable (instructions are detailed in the UIM user guide). Be sure to export the configuration as an excel file which will be helpful with wiring the appropriate blunt cuts wires. After flashing and wiring the UIM, test for proper upfit operation.

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From: Gabara, Anna (.)
Sent: Friday, August 03, 2012 10:56:53 AM
To: Freiburger, Randy (R.M.)
CC: Boyd, John (R.); Seashore, Patricia (P.J.)
Subject: RE: Flex ATM vs. Upfitter update

Attachments: AC Clutch Input Process_Arch1 1_Rev009.docx; H567 ATM 14D628 Ford HW Spec_8-1-12_Arc1.1 rev 1.6.doc

Hi Randy,

Completely understood. I think regardless which supplier we go with we still need a detailed breakdown and understanding of the feature list and I/O. Attached is an example of a SW feature in the ATM. If you could put in words how each feature should work then I can help fill in the diagrams and tables for the FS. So only the Section labeled Feature Summary is what we would need on each feature. Also attached is the ATM HW spec which shows the I/O breakdown.

Please let me know if you need help filling these out.

Also, any luck from Intermotive on a DT?

Best Regards,
Anna

From: Freiburger, Randy (R.M.)
Sent: Friday, August 03, 2012 7:16 AM
To: Gabara, Anna (.)
Cc: Boyd, John (R.); Seashore, Patricia (P.J.)
Subject: RE: Flex ATM vs. Upfitter update

Anna,
Thank you. We really need a commitment at this point that the product will be there. I will also need a commitment to deliver to deliver the function that will be displayed in North Carolina next week.
Just concerned the function we have been working towards and are demonstrating to our customers now will be at risk. Our current competitive disadvantage will be even a wider gap if it is less and/or late.
We should protect ourselves by preparing for the Hardware Review with InterMotive.

Best Regards,

Randy Freiburger
Police/Ambulance/QVM, Supervisor
PDC Bldg. / 1H-J21
Phone: 001-313-805-3709
email: rfreibur@ford.com

Share the Ford story at www.TheFordStory.com

From: Gabara, Anna (.)
Sent: Thursday, August 02, 2012 7:47 PM
To: Freiburger, Randy (R.M.)
Cc: Boyd, John (R.); Seashore, Patricia (P.J.)
Subject: Flex ATM vs. Upfitter update

Hi Randy,

I just got your voicemail. Today in the meeting with Flex they said they are fairly confident they could support the Upfitter features and functions. They would like more details on the SW Application piece to programming the outputs. John and I committed to having this for them by the end of the day Monday.

Call me tomorrow when you have time and we can work on determining what information we can share with them and more of the call details.

Best Regards,
Anna

EXHIBIT
313

From: Schmatz, Craig (C.A.) <cschmatz@ford.com>
Sent: Friday, March 22, 2013 4:16 PM
To: Jastrzembowski, Martin (M.) <mjastrze@ford.com>
Cc: Haggerty, Terry (T.J.) <thaggert@ford.com>; Taylor, Stuart (S.) <stayl151@ford.com>; Seashore, Patricia (P.J.) <pseashor@ford.com>; Hrecznyj, Michael (.) <mhreczny@ford.com>; Boyd, John (R.) <jboyd22@ford.com>; Van Wiemeersch, John (J.R.) <jvanwiem@ford.com>; Crockett, Dante (D.K.) <dcrocket@ford.com>; Gabara, Anna (.) <agabara@ford.com>; Buchanan, Michael (M.J.) <mbuchana@ford.com>; Freiburger, Randy (R.M.) <rfreibur@ford.com>; Murray, Jim (J.R.) <jmurray@ford.com>; Murphy, Michael (M.L.) <mmurph30@ford.com>; Bolt, Rick (R.S.) <rbolt@ford.com>
Subject: RE: Upfitter Interface Module - Update from the EMM Review today with Terry Haggerty & the Core Module team

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As you've heard me mention before, Ram is chipping away at Super Duty – the **undisputed** leader in the segment – and will continue to make inroads into our fleet business unless we provide high impact fleet content. I'll work on the volumes with marketing and will also look to grow the volumes on other vehicle lines, but I don't agree to drop the content out of the program.

Terry – Please call so we can discuss.

Craig Schmatz
Chief Program Engineer P558 Super Duty
PDC 1J-F55
Desk: 313-248-**6832**
Cell: 313-282-0073
Admin: Charlotte Shevchik
313-322-4916

From: Jastrzembowski, Martin (M.)
Sent: Friday, March 22, 2013 3:23 PM
To: Schmatz, Craig (C.A.); Murphy, Michael (M.L.); Bolt, Rick (R.S.)
Cc: Haggerty, Terry (T.J.); Taylor, Stuart (S.); Seashore, Patricia (P.J.); Hrecznyj, Michael (.); Boyd, John (R.); Van Wiemeersch, John (J.R.); Crockett, Dante (D.K.); Gabara, Anna (.); Buchanan, Michael (M.J.); Freiburger, Randy (R.M.); Murray, Jim (J.R.)
Subject: Upfitter Interface Module - Update from the EMM Review today with Terry Haggerty & the Core Module team

Craig, Mike, Rick -

In Terry Haggerty, EESE Chief Engineer's EMM today, the core module team reviewed the P558 upfitter interface module. The meeting started with some background on how this feature started out at <PS> as a "Aftermarket" type module, then between <PS> & <PSC> moved towards an in-house module design, which is why we were Yellow at <PSC> and required a Conformance Plan for the feature not being Application Ready (A/R). Much of the discussion was centered around the P558 low take rate of this feature (2% or 6,300 units), and some of the recent changes being requested by the Upfitter group, and the resources that would be required to deliver a quality part on time, and based on these hurdles, they felt it did not make sense for the core module team to continue working on this feature. The P558 Program may need to revert to our back up plan that we identified on the Conformance Plan to provide a connector or blunt cut leads to allow upfitters to attach an aftermarket module when they do their upfits for P558. Additional direction was given to follow up and try get a commitment for a higher take rate for the feature or to pursue a XVL CR implementation, as it has been suggested there has been interest for this module from other vehicle lines such as Transit and Econoline, as well as Police units. (D Car).

If you would like, we can ask the module team to review what was presented today with you in an upcoming Marketing PAT or VPAT.

Thanks.

Marty Jastrzembowski
P558 Electrical PMT
(313) 805 – 4062
mjastrze@ford.com

EXHIBIT
315

From: Tyburski, Ken (K.)
Sent: Tuesday, April 02, 2013 10:11:00 AM
To: Hrecznyj, Michael (.); Jastrzembowski, Martin (M.); Boyd, John (R.)
Subject: RE: 2012/13 Global Features PST

FYI—Jim Murray has moved to another job outside of SVE. Dick Cupka is replacing Jim (plus Randy Freiburger who has worked on the Upfitetr module is still around).
We all agree that the upfitter module is needed. We understand pros and cons of doing inside. At this point we may need a transition plan, as Dodge is releasing now, and we understand GM will soon follow. Sprinter has just upgraded their Parametric Module option for their vans/cutaways with more features and ease for upfitters and customers. I think commercial competitiveness vs. other OEMS is biggest issue, where they now will be able to order on the factory invoice with full integration into their electrical systems with full warranty coverage(plus they are capable also to fit customers end needs).

Ken Tyburski
Special Vehicle Engineering: BBAS/Product Information
Phone: 313-805-3756
Email: ktybursk@ford.com

From: Hrecznyj, Michael (.)
Sent: Tuesday, April 02, 2013 8:21 AM
To: Jastrzembowski, Martin (M.); Boyd, John (R.)
Cc: Murray, Jim (J.R.); Tyburski, Ken (K.)
Subject: RE: 2012/13 Global Features PST

The reasoning to go in-house for the Upfitter Module is the critical piece:
Features,
Competitiveness,
Futuring,
CAN messages,
Ford Specs,
Factory Installed,
Better business case,
Lessons learned by not doing it in house ex.: FE5
Enabler for "one off" features ex.: firewall for trailer camera/TPMS

Maybe a slide should be created for Craig when he meets with Terry?

Michael Hrecznyj
Ford Motor Company
EESE Advanced Features Development, T407
Phone: 313-805-6829
Email: mhreczny@ford.com

From: Jastrzembowski, Martin (M.)
Sent: Monday, April 01, 2013 4:05 PM
To: Hrecznyj, Michael (.); Boyd, John (R.)
Subject: RE: 2012/13 Global Features PST

John may have the initial <PS> "Basic Design" file that showed the Intermotive pricing / design assumptions, etc….I am not really sure when we changed to in-house, but that was during the early EFIRST meetings, about when you got involved.

Marty Jastrzembowski
P558 Electrical PMT
(313) 805 – 4062
mjastrze@ford.com

-----Original Appointment-----
From: Hrecznyj, Michael (.) **On Behalf Of** Halseth, Mark (M.A.)
Sent: Monday, April 01, 2013 3:39 PM
To: Boyd, John (R.); Jastrzembowski, Martin (M.)
Subject: FW: 2012/13 Global Features PST
When: Wednesday, April 03, 2013 8:00 AM-9:00 AM (UTC-05:00) Eastern Time (US & Canada).
Where: 1R-F19 with WebEx

John/Martin,

Can one of you go through the history of the Upfitter Module? I can't say I know the history that well. I can pick it up from the time I started.

-----Original Appointment-----
From: Halseth, Mark (M.A.)
Sent: Monday, April 01, 2013 7:58 AM

EXHIBIT
316

To: Halseth, Mark (M.A.); Aaron, Mark (M.C.); Bennie, Brian (B.G.); Mika, Paula (P.); Garza, Laura (L.); Dieter, Maria (M.A.); Gresens, Bradley (B.D.); Groth, Larry (L.E.); Hadano, Tadasu (T.); Hammoud, Hassen (.); Hellman, Kristin (K.A.); Hildreth, Brian (B.S.); Hoemmen, Karl (K.F.); Holt, Jeff (J.E.); Hubert, Gregory (G.S.); Jacob, Phil (P.C.); Jahn, Brian (B.C.); Jones, Brock (B.J.); LaWall, Thomas (T.G.); Lemcke, Beatrix (B.); Lupton, Brian (B.L.); Meyer, David (D.H.); Misawa, Gersio (G.M.); Mrozek, Joerg (J.M.); Mustaine, Todd (T.A.); Neuhart, Thomas (T.R.); Oden, Marcus (O.); Pick, Chris (C.); Robertson, Amy (A.L.); Rosen, Julie (J.A.); Sarkisian, Andrew Denni (A.D.); Sharp, Robert (R.G.); Soderquist, Todd (T.); Sprawka, Jason (J.H.); Topouzian, Daron (D.); Trost, David (P.); Van Wiemeersch, John (J.R.); Voormanns, Sabine (S.); Weitman, Lester (L.H.); Wroblewski, Thomas (T.R.); Yeung, Lisa (L.L.); Beggs, Brad (B.D.); Pleet, Edward (E.A.); Gersabeck, David (D.M.); Marchwicki, Julius (J.); VanDagens, Doug (D.R.); Pellizzari, Walter (W.S.); Lefebvre, John (J.B.); Agius, Alicia (A.); Reisen, Samuel (S.E.); Spahl, Robert (R.); Richardson, John (J.D.); McQuaid, Michelle (M.L.); Chechak, Bridget (B.G.); Pupin, Anthony (A.A.); Grandstaff, Ravinder (R.K.); Currie, Dana (L.); Chander, Bala (.); Sawicke, Melissa (.); Dahabra, Mouhanad (M.C.); Beiser, Joe (J.C.); Goddard, Paul (P.A.); Smith, Patrick (P.A.); Morales, Karla (K.); Arceo Díaz, Francisco (FAD.); Rebhun, Andrew (A.S.); Patterson, Craig (C.T.); Jones, Clifford (C.D.); PPC1RF19 Conf. Room; Crockett, Dante (D.K.); Hepaktan, Cenk (CH.); Haggerty, Terry (T.J.); Bertini, Cynthia (C.M.); Mar Orellana, Fernando (FER.); Fravel, William (W.R.); Merrifield, Dean (D.G.); Zhang, Yvonne (L.); Larsen, John (J.B.); Boyd, John (R.); Jastrzembowski, Martin (M.); Freiburger, Randy (R.M.); Murray, Jim (J.R.); Taylor, Stuart (S.); Hrecznyj, Michael (.); Rowling, Katrin (K.); Ribeiro, Katia (K.); Reddy, BJ (.)
Cc: Kubacki, Brian (B.); Falconer, Donna (D.); Pauli, Jonathan (J.); Pijls, Walter (WWF.); Kosulinski, Tamara (T.); Kuerten, Inga (I.); Keller, Robert (R.F.); Huebner, Annette (A.L.); Levine, Eric (E.S.); Kubitskey, Mark (M.A.); Schock, Timothy (T.M.); Miranda, Henrique Canto (H.C.); Wu, Yi Hui (Y.); Wang, Jiadong (J.)
Subject: 2012/13 Global Features PST
When: Wednesday, April 03, 2013 8:00 AM-9:00 AM (UTC-05:00) Eastern Time (US & Canada).
Where: 1R-F19 with WebEx

Agenda change, Upfitter Module first up….

Agenda:

- Upfitter Module – Michael Hrecznyj 30 min
- Dual USB Smart Charge – Stuart Taylor (tentative, to be confirmed) 30 min

Mark Halseth invites you to an Audio Only Personal Conference Meeting.

Audio conference information

US Toll Free Number: +1-888-628-3668
FordNet 248-3668 / Toll: +1-313-248-3668
FordNet 248-3668 / Toll*: +1-313-248-3668
Global call-in numbers: https://ford.webex.com/ford/globalcallin.php?serviceType=MC&ED=185108852&tollFree=1
Toll-free dialing restrictions: http://www.webex.com/pdf/tollfree_restrictions.pdf

Redacted - Confidential

* FordNet 248-3668 / Toll should only be used if the primary number does not work.

Use information below only if directed to by the host

Optional WebEx Link: https://ford.webex.com/mc
Meeting Number: 719 219 231
Redacted - Confidential

MC08

http://www.webex.com

From: Monnan, Syed (S.M.) <smonnan@ford.com>
Sent: Thursday, January 15, 2015 9:09 AM
To: Mince, Robert (R.W.) <rmince@ford.com>
Cc: Seashore, Patricia (P.J.) <pseashor@ford.com>
Subject: RE: 2014 BPR Metric Updates - 13945 Uplifter Interface Module
Attach: 13945x.xlsm

Rob

After reviewing some older emails from Monifa, I did get some instructions to update an excel file which I believe is this GTDS workbook. So yes, I have updated some basic info within that file. I am not too familiar with it but can update anything that's required. According to the SharePoint the last update in the file shows 12/7/14.

Any further action required, pls let me know. Attached is the copy from SharePoint for your reference.

Thx
Syed

From: Mince, Robert (R.W.)
Sent: Thursday, January 15, 2015 8:00 AM
To: Monnan, Syed (S.M.)
Cc: Seashore, Patricia (P.J.)
Subject: FW: 2014 BPR Metric Updates - 13945 Uplifter Interface Module

Syed – do you maintain the GTDS workbook for this?

Thanks,

Rob Mince
Manager, Global Body & Security Electronics
Dearborn Building 5, 1A017
Office: 313.337.5771
Cell: 248.308.4568

From: Michalak, Lawrence (L.H.)
Sent: Wednesday, January 14, 2015 5:10 PM
To: Mince, Robert (R.W.)
Cc: Santer, Robert (R.M.); Moore, Paul (P.G.)
Subject: RE: 2014 BPR Metric Updates - 13945 Uplifter Interface Module

Thanks Rob, much appreciated.
Could you inform me once the completed <DJ> status is reflected in the workbook?
https://dept.sp.ford.com/sites/OnePortfolio/Books/5100T405/13945x.xlsm

Larry

From: Mince, Robert (R.W.)
Sent: Wednesday, January 14, 2015 4:52 PM
To: Haggerty, Terry (T.J.)
Cc: Santer, Robert (R.M.); Moore, Paul (P.G.); Michalak, Lawrence (L.H.)
Subject: RE: 2014 BPR Metric Updates - 13945 Uplifter Interface Module

I've confirmed FDJ was planned for September but actually was declared on 10/29/14. The project is ours now to deliver.

Rob Mince
Manager, Global Body & Security Electronics
Dearborn Building 5, 1A017
Office: 313.337.5771
Cell: 248.308.4568

From: Mince, Robert (R.W.)
Sent: Wednesday, January 14, 2015 4:28 PM
To: Haggerty, Terry (T.J.)
Cc: Santer, Robert (R.M.); Moore, Paul (P.G.); Michalak, Lawrence (L.H.)
Subject: RE: 2014 BPR Metric Updates - 13945 Uplifter Interface Module

Yes – I've asked Syed Monnan and Pat Seashore to confirm that status and I'll let you guys know ASAP.

EXHIBIT
317

Rob Mince
Manager, Global Body & Security Electronics
Dearborn Building 5, 1A017
Office: 313.337.5771
Cell: 248.308.4568

From: Haggerty, Terry (T.J.)
Sent: Wednesday, January 14, 2015 3:46 PM
To: Michalak, Lawrence (L.H.); Mince, Robert (R.W.)
Cc: Santer, Robert (R.M.); Moore, Paul (P.G.)
Subject: RE: 2014 BPR Metric Updates - 13945 Uplifter Interface Module
Importance: High

Rob, can you help make sure this project is updated w/ the latest status.

Thanks,
Terry Haggerty
Global Chief Engineer, Research & Advanced EESE
Office: (313) 323-2493, Cell: (313) 805-6816
e-mail: thaggert@ford.com
RIC -- Room 3513 or Building #5 -- Room 3A089

From: Michalak, Lawrence (L.H.)
Sent: Wednesday, January 14, 2015 2:51 PM
To: Mince, Robert (R.W.)
Cc: Santer, Robert (R.M.); Moore, Paul (P.G.); Haggerty, Terry (T.J.)
Subject: 2014 BPR Metric Updates - 13945 Uplifter Interface Module

Bob,
Project 13945 Upfitter Interface Module was scheduled to complete <DJ> in Sept. of last year.
Did the project complete <DJ>? If not, is there a new date / plane?
Appreciate a response to support 2014 BPR metrics for Project Delivery.
Thanks.
Larry
X83348

From: Michalak, Lawrence (L.H.)
Sent: Monday, January 12, 2015 4:34 PM
To: Santer, Robert (R.M.)
Cc: Moore, Paul (P.G.); Mince, Robert (R.W.)
Subject: FW: 2014 BPR Metric Updates

Bob, Any updates for project 13945 Upfitter Interface Module? Larry

---

From: Michalak, Lawrence (L.H.)
Sent: Monday, January 05, 2015 1:17 PM
To: Santer, Robert (R.M.)
Subject: 2014 BPR Metric Updates

Bob,
It is my understanding that Terry believes he is responsible for assuring ALL of EESE reports project status in an timely manner.
Please see attached – a few projects require updates by the end of the week.
See me with any questions, thanks.
Larry

Product Development

Project Management File

Product Workbook Version: 4.2	Instructions for completing the Project Management Documentation file	8-Oct-14

Please refer to the Project and Portfolio Management Help for latest information

Training:	https://proj.sp.ford.com/sites/GTDS/Web/Help.aspx
Manual:	https://proj.sp.ford.com/sites/GTDS/Product/Home.aspx

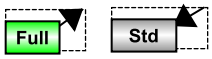
Please Note:
The worksheets within this file contain Product Technology Version 2.0 documents for management and reporting of project status and delivery of technologies through to <AR> (Application Readiness). They follow a common, corporate format. As of December 2009, a common set of deliverables must be established to deliver the technology from <AR> to "<DJ>". Workplans must be established with core engineering functional areas impacted and implemeting program team.

The key drivers for this revised document format are consistency, ease of use, clarity and improved print and visual output for on-screen presentation at reviews, thereby minimizing the need for duplicate presentation material.

Protection - certain worksheet cells are locked and linked to the source sheets/cells, this is to prevent duplicate input for the same information. Pop-up comments indicate the source of data entry.

On-Screen Help - Pop-up comments assist with the required input, e.g. . . . Project Name

Full Screen - each document can be expanded to Full Screen and back to normal view using the buttons at the top of the sheet. This can be used for presentation review forums where the maximum visible screen size is utilized.



This workbook contains the following worksheets…

Charter
A project overview to be compiled at the very start of the project. This document is the point of input for much of the core information found in the other worksheet documents together with the Project Management direction of the project, i.e. GTDS Gateways, Key Project Milestones or a combination of both GTDS Gateway or Project Milestone.

Status
The key document for managing and reporting overall project progress and health on a regular basis. Most input is from the user, there are some links from the One Pager for core project information and attribute management.

Risk Log
A record of key issues on the project, how they are managed the resolution of them.

Business Summary
All business assumptions should be entered on this form. Note: This form is still under development.

Gateway Reviews (<TKO>, <RCS>,<CR>,< AR>,< DJ>)
Progress against gateways from <TKO> through to <AR> is managed on the four Gateway Review sheets. By clicking on the '+' grouping button, each deliverable can be expanded to reveal 10 sub-deliverable rows.

Detailed tracking of work and progress towards gateway readiness can be managed utilizing the 4 hidden columns and the 10 sub-deliverable blank rows beneath each deliverable. These can be used as appropriate for the project. <DJ> is added as a reference. As of December 2009, the old "<IR>" milestone has been integrated into GPDS for Product Technologies.

Hidden Data

FORD003160

Product Development

Technology Overview

Project Output Type: Product Technology

13945 Upfitter Interface Module

Secret

Statement of Benefit / Problem Statement

Upfitter module offers upfitter providers a flexability in customizing upfitter features for downstream customers (Police, Ambulance, Rescue, Utility, RV's...)

Scope / Technical Approach

Upfitter module will be a GUI programable module offering programamble outputs based on boolean logic combinations of switch inputs and CAN signals. Reduce or eliminate Upfitter Service Providers splicing into existing vehicle wiring by prewireing and providing CAN message replacement of hardwired functions (ex idle boost).

Value Proposition

Upfitter module offers upfitter providers a flexability in customizing upfitter features for downstream customers (Police, Ambulance, Rescue, Utility, RV's...) Will enable Ford continued dominance in the comercial upfitter market. Chrysler currently offers an upfitter module. Ford version will leapfrog the competition in features, flexability and ease of use.

Customer (mgr/function):

Program: P558 / 01Feb16
Variable Cost Status: 57
Weight Status: 0

Project Lead: SMONNAN
Manager: RMINCE

☐ Lincoln Better Plan ☐ Industry First ☐ Segment First ☑ Be Competitive

Last Saved: 19Nov14

Product Development

Project Charter

Project Output Type Product Technology

Project No. & Title	13945	Upfitter Interface Module

Project Charter	Approved by	Date
1st Publication		
Latest Revision		

Workplan	Approved by	Date
1st Publication		
Latest Revision		

Key Contacts	Name	CDSID
Project Leader	Syed Monnan	SMONNAN
Manager (of Proj Lead)	Rob Mince	RMINCE

Statement of Benefit / Problem Statement

Upfitter module offers upfitter providers a flexability in customizing upfitter features for downstream customers (Police, Ambulance, Rescue, Utility, RV's...)

Scope / Technical Approach

Upfitter module will be a GUI programable module offering programamble outputs based on boolean logic combinations of switch inputs and CAN signals. Reduce or eliminate Upfitter Service Providers splicing into existing vehicle wiring by prewireing and providing CAN message replacement of hardwired functions (ex idle boost).

Decision Expected / Anticipated Outcome

Decision by Marketing, Vehicle Program, FCSD and EESE directors and chief engineers if project meets quality robustness, timing, technical, packaging and business targets at P558 Program milesstone. Adequate resources allocated and commited per GTDS timing and project requirements by Marketing, Vehicle Program, FCSD and EESE directors, chief engineers and managers.

Results / Evidence Required to support Outcome Decision

GTDS documentation, GTDS process checks/reviews and IR evidence book

Customer Information

Customer / Receiving Manager		Organization or Functional Area	

Project Resources & Duration

Worktask No.		

Additional Information

<Picture or Diagram here> Note:- Use Copy, Paste to migrate a picture from another unprotected document.
*The worksheet protection on this file will **not** allow use of Insert, Picture, From File…..*

Change History

Enter major revisions only

No.	Date	Description of Change	Cause	Impacts: Charter	Impacts: WrkPlan
1				Yes	Yes
2				Yes	Yes
3				Yes	Yes
4				Yes	Yes
5				Yes	Yes

Product Development

Workplan

Project Output: Type Product Technology

Project No. & Title	13945	Upfitter Interface Module

Workplan Purpose

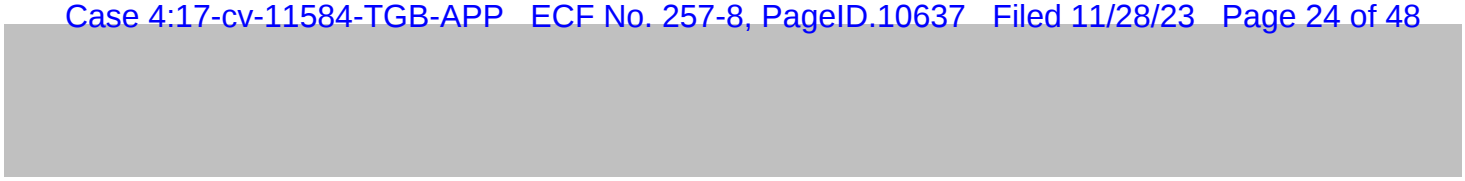
To describe, at a high level, steps needed to deliver the project's objectives outlined in the Project Charter.
To support critical resource allocation containability actions by providing a form to elicit resource requirements from project leaders.
May include deliverables, targets, tasks, resources, timing/duration, personnel, etc. (see example below)
This workplan is not intended to list every task required to deliver the project. A more detailed Project plan can be developed for that purpose.

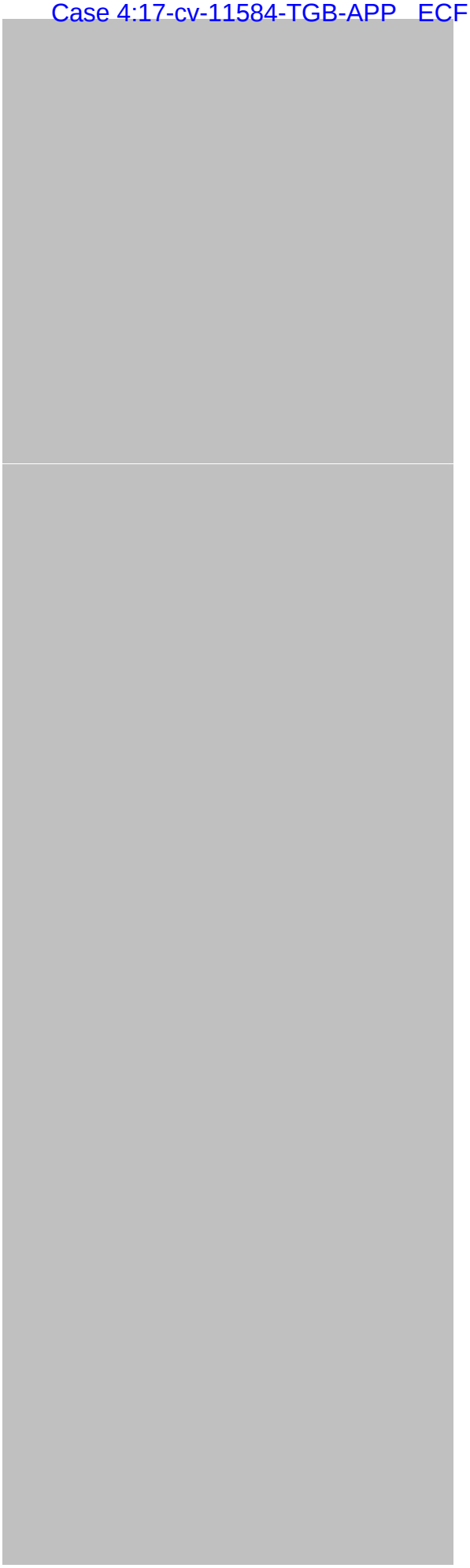
Suggested Method / Questions

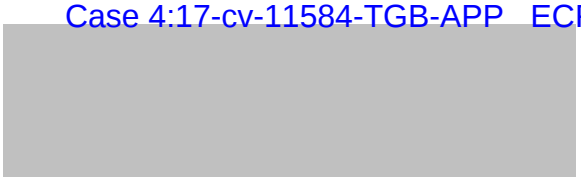
Start by answering the following questions:
What do we need to deliver to meet the objectives described in the charter?
How will we know we have met those deliverables (measure of success/target)?
What tasks need to be performed to meet the deliverables?
What resources are required? These may include hardware (e.g. test bench, single cylinder engine, steady-state dyno, vehicle, etc.) or software (CAE etc.)
What is the timing? Are resources available in that timing?
Who (especially from non-R&A organizations) is required?

High Level WorkPlan Example / Guideline

Deliverable	Measure of Success/ Assessment Criteria (Target)	Assessment Method (Task)	Task #*	Resource Needed	Timing	Responsibility	Organization	Resource Contained/ Agreed?
Subset of signals to be read off CAN	List of signals	Compare signals to Benchmarking info	1	Netcom	01/15/2013 - 04/28/2013	Pat Henderlong	Program	Yes
Basic functions defined	Hardware Spec	AR milestone Technical meeting with piers	2	FCSD/Program	01/15/2013 - 04/28/2013	Michael Hrecznyj	FCSD/Program	Yes
Number and type of I/O	Hardware Spec	AR milestone Technical meeting with piers	3	EESE	01/15/2013 - 04/28/2013	Michael Hrecznyj	EESE	Yes
Subset of CAN signals to be published	List of signals	AR milestone Technical meeting with piers	4	Netcom	01/15/2013 - 04/28/2013	Michael Hrecznyj	EESE	Yes
Business Case	TARR Complete	AR milestone program meeting	5	Finance, Marketing	01/15/2013 - 04/28/2013	Sorensen, Martha	Program	Yes
Packaging	Module Dimensions Hardware Spec Bracket Y/N	AR milestone Technical meeting with piers	6	Program	01/15/2013 - 04/28/2013	Anna Gabara	EESE	Yes
GUI Design	Functional Spec	Technical meeting with piers	7	EESE	01/15/2013 - 04/28/2013	Flextronics/Ford HMI	Supplier	Yes
USB Connector Part Number	Part Number	Part Number	8	EESE	01/15/2013 - 04/28/2013	Jack Huling	EESE	Yes
Kits	Hardware Spec	FCSD Agreement	9	FCSD/Program	01/15/2013 - 04/28/2013	Jim	FCSD	Yes
SA TDR	Review, Meeting Notes	Technical meeting with piers	10	EESE/Program	01/15/2013 - 04/28/2013	Michael Hrecznyj	EESE	Yes
AR-DVP	DVP	Technical meeting with piers	11	EESE/Program	01/15/2013 - 04/28/2013	Michael Hrecznyj	EESE	Yes
Boundry Diagram	Diagram	Technical meeting with piers	12	EESE/Program	01/15/2013 - 04/28/2013	Michael Hrecznyj	EESE	Yes
DFMEA	DFMEA	Technical meeting	13	EESE/Progra	01/15/2013 - 04/28/2013	Michael	EESE	Yes
RFQ	SOB	SOBA	14	Purchasing	10/30/2013	Michael	EESE	Yes







Product Development

Resource Summary

Project Output Type Product Technology

Project No. & Title	13945	Upfitter Interface Module

Team Members and/or Personnel with Unique Skill Set

Personnel or Agency

CDS ID	*Name / Skill description*	CDS ID	*Name / Skill description*
	Marketing		
	Program Finance		Program Finance: Sorensen, Martha
	EPMT		EPMT: Martin Jastrzembowski
	EESE		EESE: Pat Seashore/Syed Monnan
	FCSD		FCSD: Freiburger, Randy
	FCSD		FCSD: Murray, Jim (J.R.)

Purchased Services

Supplier and other Personnel (non-core resources)

Is this a supplier led project? Or does a supplier(s) have a critical role in the technology development

Project Costs / Resources

Budget / Resource Estimates

Current Calendar Year:			Next Calendar Year:			Summarize Project Costs & Resources on Project Charter
Department	Heads	Material ($ 000	Department	Heads	Material ($ 000	Comments
Totals:	0	$0	Totals:	0	$0	

Testing & Facilities Required

Internal Testing: Describe / List resources (Ford PD) required to complete testing

FSS (Magna Closures) responsible for all testing

External Testing: Describe / List external resources (unique to Ford) required to complete testing

FSS (Magna Closures) responsible for all testing

Facilities: Describe / List any facilities (unique to Ford) required to complete testing or other project work

FSS (Magna Closures) responsible for all testing

ADDITIONAL INFORMATION

This is a test description

Product Development

PROJECT STATUS

Project Output Type Product Technology

Project No. & Title	13945	Upfitter Interface Module

Project Status and Gateways

Gateway Plan					Peer Reviews		Gateway Comments
Gateway	Target	Commitment	Actual	Outcome	Target	Actual	This is a test for comments.
<TKO>			1-Jun-11	Continue to <RCS>	N/A	N/A	
<RCS>			22-Apr-13	Continue to <CR>	-	-	
<CR>			6-May-13	Continue to <AR>	-	-	
<AR>			22-Aug-13	Continue to <DJ>	-	-	
<DJ>	10-Sep-14	10-Sep-14	-	-	N/A	N/A	

Project Status		Project Status Comments
OVERALL:	Green	11/19/14: No known issues as of now. FNOS review was complete on 11/17/14
Project Managmnt.:	Green	
Business:	Green	
Technical:	Green	

Issues & Roadblocks

	Issues & Roadblocks	Resolution Plans - actions to resolve or close the Issue	Owner	Due Date
1				
2				
3				
4				
5				
6				

Progress and Recent Developments

- progress and key activities since the last update

	Activity
1	11/19/14: No known issues as of now. FNOS review was complete on 11/17/14
2	
3	
4	
5	
6	

System/Subsystem & Supplier Summary

System / SubSystem	Primary / Secondary	Supplier		GCBP		Buyer	Comments / Status
		Development	Production	Aware	Agree		

Intelectual Property Patents & Invention Disclosures

Product Development

Project Risk Log

Project Output Type Product Technology

Project No. & Title	13945	Upfitter Interface Module

Project Leader: Syed Monnan

- - - - - - - - Risk - - - - - - - -									- - - - - - - - Action - - - - - - - -			
ID	Date Raised	Originator	Risk Description	Category/ Type	Probability	Impact	Risk Rating	Proximity (when)	Owner	Responses / Countermeasures	Last Update	Status	Comments
1	10/10/13	mhreczny	Scope creep	Organisational									
2	10/10/13	mhreczny	wake ups keep module awake	Technical						document in user manual			

- - - - - - - - Risk - - - - - - -									- - - - - - - - Action - - - - - - -			
ID	Date Raised	Originator	Risk Description	Category/ Type	Probability	Impact	Risk Rating	Proximity (when)	Owner	Responses / Countermeasures	Last Update	Status	Comments

Product Development

Business Summary

Project Output Type Product Technology

Project No. & Title	13945	Upfitter Interface Module

Value Proposition

Upfitter module offers upfitter providers a flexability in customizing upfitter features for downstream customers (Police, Ambulance, Rescue, Utility, RV's...) Will enable Ford continued dominance in the comercial upfitter market. Chrysler currently offers an upfitter module. Ford version will leapfrog the competition in features, flexability and ease of use.

Strategic Fit / Risk of Not Doing

Risk of Not Doing: Loss of revenue, vehicle sales and prestege in the Upfitter market (Police, Ambulance, Rescue, Utility, RV's...).

Business Assessment

Key Business Measures

<RCS> Target Ranges

Absolute Variable Cost Range:	
Variable Cost (to comparator / +/-):	
Investment Range (production):	3.11M

3.11M Includes EESE headcount

Approx. Weight Change (Absolute):	

Add brief comments here

<CR> / <AR> Target / Status

	Target	Status
Variable Cost (Absolute):	165	57
Variable Cost (Relative):		

165 was the target using an after market unit. Competitive qoute brought down the system cost to 57. Revenue is at 260.

Approx. Weight Change (Absolute):	Target	Status
	approx 220g	

Add brief comments here

Market / Vehicle Impact Assesment

Enter Intro year for Market / Vehicle				Comments / Potential Migration
	Americas	Europe	Asia	Upfitter Module is planned for a cross vehicle migration to all vehicles retrofitted in the after market: trucks, vans, cars.
B				
C				
C/D				
D				
C. Trk				
FS Trk	2016			
Other				

Vehicle Program Plans

	Vehicle Name	Program Code	Volume (000s)	Job #1 (Date)	Included in GTCP?	Customer Feature? Yes / No	Std. / Opt.	GFCP
1st App.	Super Duty	P558		1-Feb-16	No	No	Optional	Yes
2nd App.					No	No	Standard	No

Current TARR is at or above 62%. TARR will increase with additional volumes from other platforms, decreased investment or decrease piece price. Follow on programs will have application costs: testing, bracket, bracket tooling, packaging,

Estimated Program Production Costs

Facilities & Tooling:	$267,500	$K
Engineering:	$1,200	$K
Launch:		$K
Total Program Investment:		$K

Comments

Engineering costs is ED&T of 1.2M paid over 3 years with 9% interest

Attribute Assessment

Attributes	Subjective Impact ± %	Target	Planned Attribute Activity	Comments / Status
1st				
2nd				
3rd				
4th				
5th				
6th				

Additional Information

Enter comments related to Value Assessment not already documented. Include information such as Manufacturing assumptions/requirements, serviceability, etc. NOTE: Risks should be listed on the "Risk" tab.

Product Development

<TKO> Technology Kick-Off

Project Output Type Product Technology

Project No. & Title	13945	Upfitter Interface Module

Project Leader:	Syed Monnan

Phase/ Deliv N°	MDCOV	Deliverable	Status RYG	Close by	Evidence	Comments & Actions
Project Management					{insert hyperlink here}	
TKO-1.1	M	**Project Charter Initiated**	G		Upfitter Evidence eRoom	
TKO-1.2	M	**High-Level Workplan Approved**	G		Upfitter Evidence eRoom	
TKO-1.3	M	**Resource and Status Worksheets Completed**	G		Upfitter Evidence eRoom	
TKO-1.4	M	**Project Risk Sheet Completed**	G		Upfitter Evidence eRoom	
TKO-1.5	M	**<RCS> Workplan with Target Date Completed**	G		Upfitter Evidence eRoom	
TKO-1.6	M	**<TKO> Gateway Review Completed**	G		Upfitter Evidence eRoom	
TKO-1.7	M	**Project Information Archived and <TKO> Checksheet Signed-off**	G		Upfitter Evidence eRoom	

Gateway Review Agreements

	Signatures	Date
Project Leader		
Manager		

Outcome Continue to <RCS> **Date:** 01-Jun-11

Gateway Attendance	Comments & Actions

Product Development

<RCS> Requirements and Concept Selection

Project Output Type Product Technology

Project No. & Title	13945	Upfitter Interface Module

Project Leader:	Syed Monnan

Phase/ Deliv N°	MDCOV	Deliverable	Status RYG	Close by	Evidence	Comments & Actions
Project Management					{insert hyperlink here}	
RCS-1.1	M	Project Charter Updated and Approved	G		Upfitter Evidence eRoom	
RCS-1.2	M	High-Level Workplan Updated and Approved	G		Upfitter Evidence eRoom	
RCS-1.3	M	Resource and Status Worksheets Updated	G		Upfitter Evidence eRoom	
RCS-1.4	M	<RCS> Commitment Date Confirmed	G		Upfitter Evidence eRoom	
RCS-1.5	M	Project Risk Sheet Updated	G		Upfitter Evidence eRoom	
RCS-1.6	M	<CR> Workplan with Target Date Complete	G		Upfitter Evidence eRoom	
RCS-1.7	M	<RCS> Gateway Review Completed	G		Upfitter Evidence eRoom	
RCS-1.8	M	Project Information Archived and <RCS> Checksheet Signed-off	G		Upfitter Evidence eRoom	
Business						
RCS-2.1	D	Business Value Proposition Created	G		Upfitter Evidence eRoom	
RCS-2.2	D	Relative Cost Impact Assessed	G		Upfitter Evidence eRoom	
RCS-2.3	D	Supplier Identification/Selection Completed	G		Upfitter Evidence eRoom	
RCS-2.4	D	Market / Vehicle Impact Assessment Completed	G		Upfitter Evidence eRoom	
RCS-2.5	D	Intellectual Property Protected	G		Upfitter Evidence eRoom	
RCS-2.6	D	Preliminary Business and Attribute improvement Ranges Established	G		Upfitter Evidence eRoom	
RCS-2.7	D	Global Technology Cycle Plan (GTCP) - Initial Entry Published	G		Upfitter Evidence eRoom	
Technical						
RCS-3.1	C	Customer Use Cases Developed	G		Upfitter Evidence eRoom	
RCS-3.2	D	Attribute Requirements Defined	G		Upfitter Evidence eRoom	
RCS-3.3	D	Corporate Standards and Regulatory Requirements Reviewed	G		Upfitter Evidence eRoom	
RCS-3.4	D	Benchmarking Conducted and Lessons Learned Reviewed	G		Upfitter Evidence eRoom	
RCS-3.5	D	Ideal Functions Identified	G		Upfitter Evidence eRoom	
RCS-3.6	D	Requirements on Ideal Functions Developed	G		Upfitter Evidence eRoom	
RCS-3.7	D	P-diagrams and Boundary Diagrams Created	G		Upfitter Evidence eRoom	
RCS-3.8	C	CTS Requirements & Scope Agreed	G		Upfitter Evidence eRoom	
RCS-3.9	C	Hardware and Controls Strategy Concepts Generated	G		Upfitter Evidence eRoom	
RCS-3.10	D	Models (Transfer Functions) Generated	G		Upfitter Evidence eRoom	
RCS-3.11	C	Top Concepts Chosen	G		Upfitter Evidence eRoom	

RCS-3.12	C	**Criteria and Evidence for Concept Selection Developed**	G		Upfitter Evidence eRoom	
RCS-3.13	C	**Primary Concept and Controls Architecture Selected**	G		Upfitter Evidence eRoom	
RCS-3.14	D	**<RCS> Technology Design Reviewed**	G		Upfitter Evidence eRoom	

Peer Review

Target Date: **Actual Date:**

Also refer to detail Peer Review comments in hidden columns AJ-AK in this electronic file.

Peer Review Participants	Peer Review Comments

Gateway Review Agreements

	Signatures	Date
Project Leader		
Manager		

Outcome Continue to <CR> **Date:** 22-Apr-13

Gateway Attendance	Comments & Actions

Other Signatures (as required by local departments / managers)

	Name	Date
Director R&A		
Chief Engineer		
TBD		
TBD		

	Name	Date
Attribute Leader(s)		
Core Eng. Chief Engineer		
Program Chief Engineer (CPE/CNE)		
TBD		

Product Development

<CR> Concept Readiness

Project Output Type Product Technology

Project No. & Title	13945	Upfitter Interface Module

Project Leader:	Syed Monnan

Phase/ Deliv N°	MDCOV	Deliverable	Status RYG	Close by	Evidence	Comments & Actions
Project Management					{insert hyperlink here}	
CR-1.1		Project Charter Updated and Approved	G		Upfitter Evidence eRoom	
CR-1.2		High-Level Workplan Updated and Approved	G		Upfitter Evidence eRoom	
CR-1.3		Resource and Status Worksheets Updated	G		Upfitter Evidence eRoom	
CR-1.4		<CR> Commitment Date Confirmed	G		Upfitter Evidence eRoom	
CR-1.5		Project Risk Sheet Updated	G		Upfitter Evidence eRoom	
CR-1.6		<AR> Workplan with Target Date Complete	G		Upfitter Evidence eRoom	
CR-1.7		<CR> Gateway Review Completed	G		Upfitter Evidence eRoom	
CR-1.8		Project Information Archived and <CR> Checksheet Signed-off	G		Upfitter Evidence eRoom	
Business						
CR-2.1		Business Value Proposition Updated	G		Upfitter Evidence eRoom	
CR-2.2		Relative Cost Impact Updated	G		Upfitter Evidence eRoom	
CR-2.3		Supplier Identification/Selection Updated	G		Upfitter Evidence eRoom	
CR-2.4		Market / Vehicle Impact Assessment Updated	G		Upfitter Evidence eRoom	
CR-2.5		Updated - Intelectual Property Protected	G		Upfitter Evidence eRoom	
CR-2.6		Bill of Material (BoM) created	G		Upfitter Evidence eRoom	
CR-2.7		Business and Attribute Improvement Targets Established	G		Upfitter Evidence eRoom	
CR-2.8		Global Technology Cycle Plan (GTCP) - Target Vehicle and Timing Published	G		Upfitter Evidence eRoom	
Technical						
CR-3.1		Customer Use Cases Updated	G		Upfitter Evidence eRoom	
CR-3.2		Corporate Standards and Regulatory Requirements Updated	G		Upfitter Evidence eRoom	
CR-3.3		Benchmarking Updated	G		Upfitter Evidence eRoom	
CR-3.4		Attribute Requirements Updated	G		Upfitter Evidence eRoom	
CR-3.5		Ideal Functions Updated	G		Upfitter Evidence eRoom	
CR-3.6		Requirements on Ideal Functions Refined	G		Upfitter Evidence eRoom	
CR-3.7		P-diagrams and Boundary Diagrams Refined	G		Upfitter Evidence eRoom	
CR-3.8		Hardware & Controls Interface Requirements Developed and System Constraints Identified	G		Upfitter Evidence eRoom	
CR-3.9		Design for X (FMEM & Diagnostics, Safety, Manufacturing, Implementation, Service and Maintenance) Requirements Initiated	G		Upfitter Evidence eRoom	

CR-3.10	Compatibility With Other Planned Technologies Assessed	G		Upfitter Evidence eRoom	
CR-3.11	Models (Transfer Functions) Refined	G		Upfitter Evidence eRoom	
CR-3.12	System Design Developed and Design Specifications/Rules Created	G		Upfitter Evidence eRoom	
CR-3.13	Sub-system Requirements Defined	G		Upfitter Evidence eRoom	
CR-3.14	Sub-System P-diagrams and Boundary Diagrams Created	G		Upfitter Evidence eRoom	
CR-3.15	Sub-system Design Developed and Design Specifcations/Rules Updated	G		Upfitter Evidence eRoom	
CR-3.16	Quality History Analyzed	G		Upfitter Evidence eRoom	
CR-3.17	FMEA(s) Conducted	G		Upfitter Evidence eRoom	
CR-3.18	OK to Build <CR> Demonstrator (CR DJ)	G		Upfitter Evidence eRoom	
CR-3.19	Robustness Checklist Created	G		Upfitter Evidence eRoom	
CR-3.20	DVP Created	G		Upfitter Evidence eRoom	
CR-3.21	<CR> - level DVP Executed and Reported	G		Upfitter Evidence eRoom	
CR-3.22	Concept Robustness Assessed	G		Upfitter Evidence eRoom	
CR-3.23	Attribute & Functional Trade-Offs Performed	G		Upfitter Evidence eRoom	
CR-3.24	<CR> Technology Demonstrated (CR DC)	G		Upfitter Evidence eRoom	

Peer Review

Target Date: | Actual Date: | Also refer to detail Peer Review comments in hidden columns AJ-AK in this electronic file.

Peer Review Participants	Peer Review Comments

Gateway Review Agreements

	Signatures	Date
Project Leader		
Manager		

Outcome Continue to <AR> **Date:** 06-May-13

Gateway Attendance	Comments & Actions
Reitz Graydon	Conformance Plan approved to reach AR by 8/22/13

Other Signatures (as required by local departments / managers)

	Name	Date
Director R&A		
Chief Engineer		
TBD		

	Name	Date
Attribute Leader(s)		
Core Eng. Chief Engineer		
Program Chief Engineer (CPE/CNE)		

TBD		TBD	

Product Development

<AR> Application Readiness

Project Output Type Product Technology

Project No. & Title	13945	Upfitter Interface Module

Project Leader:	Syed Monnan

Phase/ Deliv Nº	MDCOV	Deliverable	Status RYG	Close by	Evidence	Comments & Actions
Project Management					{insert hyperlink here}	
AR-1.1		Project Charter Updated and Approved	G		Upfitter Evidence eRoom	
AR-1.2		High-Level Workplan Updated and Approved	G		Upfitter Evidence eRoom	
AR-1.3		Resource and Status Worksheets Updated	G		Upfitter Evidence eRoom	
AR-1.4		<AR> Commitment Date Confirmed	G		Upfitter Evidence eRoom	
AR-1.5		Project Risk Sheet Updated	G		Upfitter Evidence eRoom	
AR-1.6		<AR> Gateway Review Completed	G		Upfitter Evidence eRoom	
AR-1.7		<AR> Technology Demonstrated (AR DC) Project Information Archived and <AR> Checksheet Signed-off	G		Upfitter Evidence eRoom	
Business						
AR-2.1		Business Value Proposition Updated	G		Upfitter Evidence eRoom	
AR-2.2		System / Sub-System Documentation Integrated in Vehicle PDL	G		Upfitter Evidence eRoom	
AR-2.3		Technology / Supplier Integration with GCBP Teams Reviewed	G		Upfitter Evidence eRoom	
AR-2.4		Market / Vehicle Impact Assessment Updated	G		Upfitter Evidence eRoom	
AR-2.5		Updated - Intelectual Property Protected	G		Upfitter Evidence eRoom	
AR-2.6		Bill of Material (BoM) Refined / Updated	G		Upfitter Evidence eRoom	
AR-2.7		Business and Attribute Improvement Targets Finalized	G		Upfitter Evidence eRoom	
AR-2.8		Global Technology Cycle Plan (GTCP) - Target Vehicle and Timing Confirmed	G		Upfitter Evidence eRoom	
Technical						
AR-3.1		Customer Use Cases Verified	G		Upfitter Evidence eRoom	
AR-3.2		Corporate Standards and Regulatory Requirements Verified	G		Upfitter Evidence eRoom	
AR-3.3		Benchmarking Updated	G		Upfitter Evidence eRoom	
AR-3.4		Attribute Requirements Verified	G		Upfitter Evidence eRoom	
AR-3.5		Ideal Functions Updated	G		Upfitter Evidence eRoom	
AR-3.6		Requirements on Ideal Functions Updated	G		Upfitter Evidence eRoom	
AR-3.7		P-diagrams and Boundary Diagrams Updated	G		Upfitter Evidence eRoom	
AR-3.8		Hardware & Controls Interface Requirements Updated and System Constraints Confirmed	G		Upfitter Evidence eRoom	
AR-3.9		Design for X (FMEM & Diagnostics, Safety, Manufacturing, Implementation, Service and Maintenance) Requirements Confirmed	G		Upfitter Evidence eRoom	
AR-3.10		Compatibility With Other Planned Technologies Reassessed	G		Upfitter Evidence eRoom	

AR-3.11	Models (Transfer Functions) Verified	G		Upfitter Evidence eRoom	
AR-3.12	System Design Confirmed and Design Specifications/Rules Updated	G		Upfitter Evidence eRoom	
AR-3.13	Sub-system Requirements Updated	G		Upfitter Evidence eRoom	
AR-3.14	Sub-System P-diagrams and Boundary Diagrams Updated	G		Upfitter Evidence eRoom	
AR-3.15	Sub-system Design Confirmed and Design Specifications/Rules Updated	G		Upfitter Evidence eRoom	
AR-3.16	Quality History Updated	G		Upfitter Evidence eRoom	
AR-3.17	FMEA(s) Updated	G		Upfitter Evidence eRoom	
AR-3.18	OK to Build <AR> Demonstrator (AR DJ)	G		Upfitter Evidence eRoom	
AR-3.19	Robustness Checklist Updated	G		Upfitter Evidence eRoom	
AR-3.20	DVP Updated	G		Upfitter Evidence eRoom	
AR-3.21	<AR> - level DVP Executed and Reported	G		Upfitter Evidence eRoom	
AR-3.22	Technology Robustness Confirmed	G		Upfitter Evidence eRoom	
AR-3.23	Attribute & Functional Trade-Offs Completed	G		Upfitter Evidence eRoom	
AR-3.24	<AR> Technology Demonstrated (AR DC)	G		Upfitter Evidence eRoom	

Peer Review

Target Date: | Actual Date: | Also refer to detail Peer Review comments in hidden columns AJ-AK in this electronic file.

Peer Review Participants	Peer Review Comments

Gateway Review Agreements

	Signatures	Date
Project Leader		
Manager		

Outcome Continue to <DJ> **Date:** 22-Aug-13

Gateway Attendance	Comments & Actions

Other Signatures (as required by local departments / managers)

	Name	Date
Director R&A		
Chief Engineer		
TBD		
TBD		

	Name	Date
Attribute Leader(s)		
Core Eng. Chief Engineer		
Program Chief Engineer (CPE/CNE)		
TBD		

Product Development

<DJ> Data Judgement

Project Output Type Product Technology

Project No. & Title	13945	Upfitter Interface Module

Project Leader	Syed Monnan

Phase/ Deliv N°	MDCOV	Deliverable	Status RYG	Close by	Evidence	Comments & Actions
Project Management						{insert hyperlink here}
DJ-1.1	V	**<DJ> Gateway Review**				
DJ-1.2	V	**<DJ> Gateway Signoff and Archival**				

Gateway Review Agreements

	Signatures	Date
Project Leader		
Manager		

Outcome **Date:**

Gateway Attendance	Comments & Actions

From: Iacovoni, Don (.) <diacovon@ford.com>
Sent: Thursday, November 2, 2017 3:09 PM
To: White, Brad (B.) <bwhit161@ford.com>; Boyd, John (R.) <jboyd22@ford.com>
Subject: UIM Feedback from Knapheide

Hi guys. Today we met with a fairly large team from Knapheide, one of our largest commercial upfitters, who had traveled into town here to discuss a number of topics related to our commercial vehicle platforms. We used this as an opportunity to present some UIM info to them. So I want to let you know that, first of all, they had no knowledge that we even offered this UIM – and this has been a common response from quite a number of our upfitters, unfortunately.

Once we walked them through the various inputs, outputs and capabilities of the UIM, the response was quite enthusiastic. In fact, we then tentatively planned a road trip for us to go visit them at one of their main facilities in the next few weeks to investigate a variety of applications for the module. Also, as I may have previously mentioned to you, we intend to have one or two "show vehicles" at the NTEA show in March 2018 as demonstrators of the UIM capabilities.

→In the meantime, I would really like to be attending whatever meetings are currently taking place for the UIM-2 which I hear is now under development. I can bring the perspective of the upfitters to these meetings. In fact, even just today they gave us several ideas on what "adds" to the UIM they would like to see, such as being easily integrated or connected to the Upfitter switch-pack that we offer (typically mounted in the overhead console area). If you know who the meeting organizers are, please let me know.

Finally, we are still working on our F250 with the snowplow upfit. We successfully uploaded a program from the Editor to the UIM, and we confirmed the output of the UIM under the programmed criteria (in this case, lift the plow when the transmission is in reverse). Unfortunately, the UIM signal evidently could not throw the snowplow relay and so the plow started to lift for perhaps a half-second but then it just stopped. We're suspecting we'll have to wire in a smaller relay that the UIM can trip, which will then trip the snowplow relay – does that sound plausible? The snowplow relays (mounted underhood) have "50A / 30A" printed on them. Looking through the UIM manual, we couldn't readily find any amperage limitations for the UIM but that must come into play at some point.

I do certainly want to thank you guys for being available for all the help on the F250 we've been working on – very much appreciated! (and we're not done yet, lol!)

Regards,

Don Iacovoni
Commercial Vehicles
Upfitter Application Engineering
313.805.6329, PDC 1H-G08, diacovon@ford.com

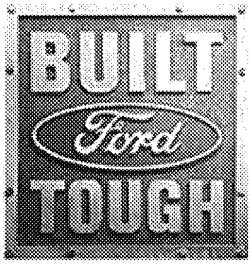


EXHIBIT
319

From: Iacovoni, Don (.) <diacovon@ford.com>
Sent: Monday, March 12, 2018 5:00 PM
To: Boyd, John (R.) <jboyd22@ford.com>; Correia, John (J.) <JCORRE36@ford.com>; White, Brad (B.) <bwhit161@ford.com>; Hart, Jeff (J.E.) <jhart4@ford.com>; Orris, Stephen (S.J.) <sorris1@ford.com>; Nadella, Srikanth (S.) <SNADELL3@ford.com>
Subject: Fwd: Upfitter interface module

We are already seeing positive results from our demo/display at last week's NTEA Work Truck Show in Indy (see thread below).

I can also say that after each of the live presentations at the show (5 per day) there were people lingering afterwards asking me all sorts of questions about the UIM. You could really see them envisioning how they could put this to good use on their upfits.

I am now even more encouraged than before that we'll see a noticeable uptick in UIM orders (which we of course hope will lead to increased orders for Ford trucks). So we'll certainly stay tuned on this.

Sent from my iPhone

Begin forwarded message:

From: "Koester, Kevin (K.)" <kkoester@ford.com>
Date: March 12, 2018 at 4:04:55 PM EDT
To: "Mouch, Tim (T.A.)" <tmouch@ford.com>, "Iacovoni, Don (.)" <diacovon@ford.com>
Cc: "Ebel, Gregory (G.)" <GEBEL4@ford.com>, "Rathsburg, Brian (B.F.)" <brathsbu@ford.com>
Subject: FW: Upfitter interface module

Gents,

I cornered Jim at NTEA. This one is worth noting. Cox is a very large fleet.

Kevin Koester
Medium Duty Truck and Super Duty Fleet Marketing Manager
6N220 RCB
kkoester@ford.com
313-248-8280

From: Ruggirello, Craig (C.S.)
Sent: Monday, March 12, 2018 3:47 PM
To: Koester, Kevin (K.) <kkoester@ford.com>; Kort, Ramzi (R.A.) <rkort@ford.com>; Skrzypiec, Stanley (S.F.) <SSKRZYP1@ford.com>
Cc: Lane, Malene (M.A.) <mlane59@ford.com>; Ellenberger, Julie (J.) <JELLENB5@ford.com>
Subject: FW: Upfitter interface module

FYI -

From: Bigelow, Jim (CEI-Atlanta) [mailto:Jim.Bigelow@coxinc.com]
Sent: Monday, March 12, 2018 2:04 PM
To: Ruggirello, Craig (C.S.)
Subject: RE: Upfitter interface module

Craig,

AT NTEA last week we were talking with the Ford folks about this. We told them it should be on all work trucks, I just want to make sure we get this on all of our trucks.

Thanks,

Jim Bigelow | Sr. Director, Enterprise Fleet
Cox Enterprises, Inc. | 6205-A Peachtree Dunwoody Rd. NE | 7th Floor | Atlanta, GA 30328
☎: 678-645-4580 | 🖷: 678-645-1597 | ✉: jim.bigelow@coxinc.com

From: Ruggirello, Craig (C.S.) [mailto:cruggire@ford.com]
Sent: Monday, March 12, 2018 8:43 AM

EXHIBIT 321

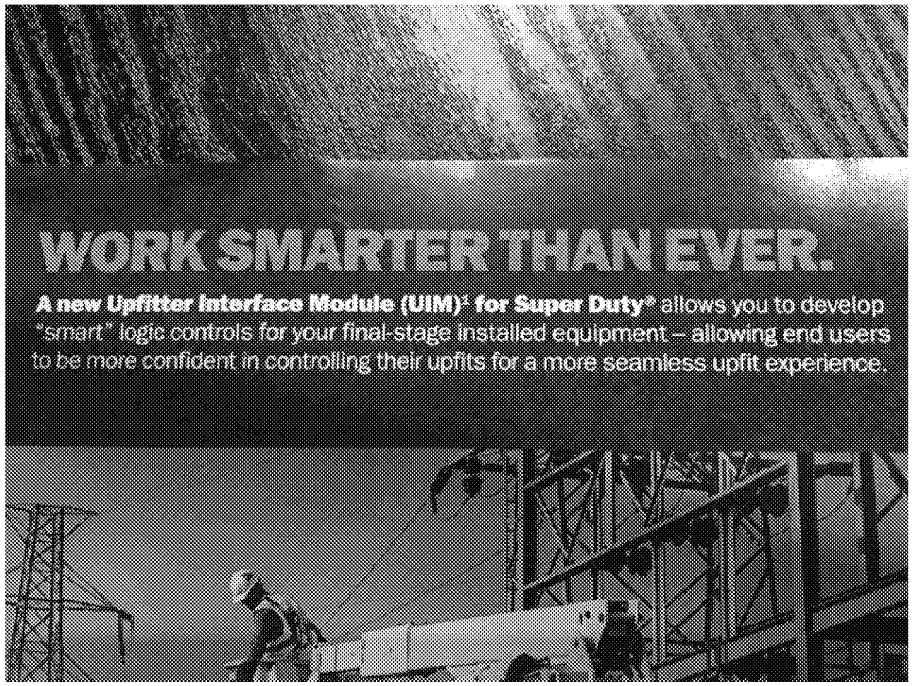
To: Bigelow, Jim (CEI-Atlanta) <Jim.Bigelow@coxinc.com>
Subject: RE: Upfitter interface module

Hi Jim – Do you have some questions on the new Upfitter Interface Module?

Sincerely,

Craig Ruggirello
Manager – Vehicle Special Order (VSO)
Ford Motor Company
Desk: (313) 248-2985
Cell: (313) 949-4932
e-mail: cruggire@ford.com

From: Bigelow, Jim (CEI-Atlanta) [mailto:Jim.Bigelow@coxinc.com]
Sent: Thursday, March 08, 2018 10:24 AM
To: Ruggirello, Craig (C.S.)
Subject: Upfitter interface module



Jim Bigelow | Sr. Director, Enterprise Fleet
Cox Enterprises, Inc. | 6205-A Peachtree Dunwoody Rd. NE |7th Floor | Atlanta, GA 30328
O - 678-645-4580 | jim.bigelow@coxinc.com

From: Richardson, Rob (R.A.) <rricha35@ford.com>
Sent: Tuesday, November 24, 2015 3:53 AM
To: Knieriem, Paul <Paul.Knieriem@magna.com>; Monnan, Syed (S.M.) <smonnan@ford.com>; White, Brad (B.) <bwhit161@ford.com>; Murphy, Richard (R.) <RMURP121@ford.com>; Satyavaram, Ramesh <Ramesh.Satyavaram@magna.com>; Smith, Roger <Roger.Smith@magna.com>; Samuel, Sharon <Sharon.Samuel@magna.com>
Cc: Hamed, Jamal (J.A.) <jhamed@ford.com>; Ald, Gwendolyn (G.M.) <gald@ford.com>; Day, Martin (M.) <mday29@ford.com>
Subject: RE: V362/V408 Upfitter PRIVATE CAN Bus

Paul,

I may be speaking out of turn here and my role is more on advisement on features and functions as SVE have good immersion in Upfitters / Converters. Your points are very valid but these are some bullet point factors of where we are at:

- I have personally been looking on and off for a CAN interface logic module for 6 years now – still nothing in production for Ford CV. We are >6 years behind the lead competition (as of 2015), need to get this in ASAP.
- We will never get it right for all conversions out there if intend on offering a full system for all.
- CAN message Rx data is a generic want across the board
- We have a deadline of MCA V36x J1 – further churn and redevelopment will put this at risk
- I haven't even seen a statemate model GUI yet on the existing system or any form of prototype – keep it simple for now (current requests)
- Escalating costs / time if more is added. (more ED+T etc)

Kind Regards / Saygilarimla / Mit freundlichen Grüßen / С Уважением / Salutations / 행복하세요 / Met vriendelijke groeten / Vennlig hilsen / 亲切的问候 / Saludos Cordiales / よろしくお願いします

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From: Knieriem, Paul [mailto:Paul.Knieriem@magna.com]
Sent: 23 November 2015 19:29
To: Monnan, Syed (S.M.); White, Brad (B.); Murphy, Richard (R.); Satyavaram, Ramesh; Smith, Roger; Samuel, Sharon
Cc: Hamed, Jamal (J.A.); Ald, Gwendolyn (G.M.); Day, Martin (M.); Richardson, Rob (R.A.)
Subject: V362/V408 Upfitter PRIVATE CAN Bus

We might be shooting ourselves in the foot.

We continued the private CAN bus discussion after our meeting and have one overriding question, "**What do the modules on the private CAN bus actually DO? What is their PURPOSE?**"

As we understand, one way they operate is to listen to CAN signals from our module (like vehicle speed, PRNDL, door lock status) as well as hard-wired inputs like Left & Right Stabilizers Deployed and Hand-break Engaged. Their modules perform basic logic on these signals and control some kind of motor or other output.

This is exactly what our Upfitter Interface Module is designed for! We are HELPING our competitors by providing a SAFE CAN bus for them to do their thing.

Alternatively, their modules may do things like record CAN messages to a USB-drive thus acting as a data recorder. We probably COULD do this since we already have a USB port up-and-running. But, this capability has never been added to our functional spec.

Likewise, their modules may do more logic processing than we currently employ. We COULD add whatever logic processing they need, IF we understand WHAT these other private CAN modules actually DO.

Finally, their modules may have hardware features that we currently do not support; such as PWM outputs or analog inputs. Again, if these are essential pieces of our competitor's modules, then why do we not have the same capabilities? As a matter of fact, NOW is the right time to add hardware because we will be doing a new board layout very soon.

In summary, we should be able to REPLACE most, if not ALL, of the private CAN bus modules with our own Upfitter Interface Module and practically do away with the private bus (pushing our competitors out of the market).

And by NOT matching the capabilities of these modules but instead making their lives easier with a SAFE CAN bus, we may simply be shooting ourselves in the foot.

Paul Knieriem

FORD ALLEGED TRADEMARK UNJUST ENRICHMENT

	IM Actual Market	IM Inflated Market
UIM U.S. Unit Sales	*81,554*	81,554
UIM Profit/Unit	$143	$143
Portion of the Market	3%	11%
Ford Unjust Enrichment	$349,867	$1,282,844

EXHIBIT
945.2